

Cave Swallows  
Lesson 3  
Variety of Field Sites

**Field Observations at a Nesting Site**

**Learner Outcomes**

The learner will

- Make field observations from an established bird observation site.
- Take notes regarding behavior.
- Record songs and analyze them.

**Background**

Behavioral studies of many species of animals are lacking and there are no species for which additional studies would not be valuable. Field observations potentially provide information on a wide variety of behaviors including intra- and inter-specific behavior. These can include feeding strategies, competition with other species, pair bonding, daily and seasonal cycles.

Students will observe cave swallows at three different sites and take notes on the activities of the birds. For those students unable to travel to the main nesting colony at Carlsbad Cavern, there are other colonially nesting birds throughout the northern Chihuahuan Desert that can be substituted.

Cliff swallows (*Petrochelidon pyrrhonota*) are a common nesting species and are closely related to cave swallows. Several heronries (heron roosting/nesting sites) also occur in this area and could also be used as an object of observation. For locations of these sites, contact the local Audubon Society or personnel from state game and fish departments.

**Observation Guidelines**

In all of the observation activities listed below, it is of utmost importance that all students understand that they are observers, not participants, in the activities of the birds. Students must remain quiet, not approach nesting colonies too closely (distance is determined by the Principal Investigator) nor do anything to disturb or harass the birds. Nests, nestlings or even young birds, which may have fallen to the ground and apparently been left stranded, must be left in place. These and other birds are protected by a variety of federal and state laws. Harassing, disturbing and taking the birds can result in fines and jail time. Observations should be made with this and only this in mind: Observe Only!

**Materials**

- Supplements numbers 4.16, 4.5
- One field guide per class
- Pencil or pen
- Notebook

- Binoculars
- Recording equipment
- Tapes
- Map of viewing locations at Rattlesnake Springs provided at teacher workshop

### **Assessments**

- Field notes
- Tape recordings

#### **Activity #1**

#### **Observation at Nesting Site**

2 hours minimum; best time is from early May through late July

### **Special Note Concerning Location**

This activity will take place at the entrance of Carlsbad Cavern during normal operating hours. Other times may be arranged with the Principal Investigator.

### **Procedure**

The teacher will

- Instruct students on what to observe and watch for prior to visiting site.
- On site, instruct students to make initial observations of location, weather, plant community, other species present, etc.
- Have students take notes on the behavior, including interaction between members of the colony and with other species.
- If individual nests can be discerned, have students make observations during a block of time to record the number of visits. They should calculate the approximate number of birds, the number of visits per hour and extrapolate this number out to the visits per day or nesting season.

#### **Activity #2**

#### **Observation at Non-nesting Site**

2 hours minimum

### **Special Note Concerning Timing**

The best time to visit the non-nesting site is from the arrival of the birds, often as early as February, through early May. At that point, the nesting cycle has started and Activity #1 would be more appropriate. Activity #2 could begin again in early August and continue through at least mid-October before the birds depart for the winter. In the spring session, activity proceeds generally throughout the day. In the fall, birds are less active during the middle of the day, generally foraging over the adjoining country but are very active an hour or two before dark.

### **Procedure**

The teacher will

- See Activity #1. The difference is that in this activity the students will be watching the birds at a site used for nesting but not being used at this particular time. Students who have visited the site during the nesting period will be able to compare differences in behavior and activity.

#### **Activity #3**

### **Observation at Foraging Site**

30 hours minimum; as much time as possible

#### **Special Note Concerning Location**

The best location for this activity is at the Rattlesnakes Springs Unit of Carlsbad Caverns National Park from April to September. Other sites could include anyplace the birds forage, such as, Walnut Canyon, Slaughter Canyon and along Black River. The most reliable place, however, is Rattlesnake Springs. The birds forage widely and may be missed, especially if allocated time is brief.

#### **Procedure**

The teacher will

- Instruct students to make observations of cave swallows and other wildlife. Observations should include species, number, activity, interaction, which habitat preference may exist and information on weather conditions. (While many species may not be identified, identification and observation skills will be enhanced regardless of the completeness of observations.)

Activity #4

### **Comparing Behavior of Similar Species**

2 hours minimum; as much time as possible

#### **Procedure**

The teacher will

- Allow the students to distinguish two phenotypically similar species by visiting both a cliff swallow colony site or foraging area and a cave swallow colony site or foraging area.
- Have students compare and record the differences in foraging strategy, interaction, areas used by each species and other differences.

Activity #5

### **Recording and Comparing Colonial Calls**

2 - 4 hours depending on colony activity

#### **Special Note**

Protocols for recording and analyzing calls may be obtained from the Principal Investigator.

#### **Procedure**

The teacher will

- Have students record a variety of calls given at Carlsbad Cavern.
- Have students record calls from Cottonwood Cave in Lincoln National Forest.
- Instruct students on the use of a sonogram to analyze calls.
- Instruct students how to compare the differences between calls at different sites.
- Have students compare the sonograms of cave swallows at Carlsbad Cavern with the calls identified for cliff swallows.